Pacific Bell	1-5 circuits: 19 days	4 hours
Southwestern Bell	1-4 circuits, no construction: 14 days; Minor construction: 19 days; Major construction: negotiated	3.5 hours
United	1-4 circuits: varies by state; 13-22 or 17-41, depending on whether equipment is available (36 in WA and OR)	Varies by state; 1-3 hours
US West	11 or 26 days, depending on whether equipment is in place	98% within 2 hours

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Notes:

1. For Ameritech, first set of numbers is for interstate circuits, span in place/no span in place/selected serving areas. Second set of numbers is for intrastate circuits, span in place/no span in place. "N" means negotiated.

K. D81

	Installation	Repair
Ameritech	1 circuit: 15/35/7; 15/40 2 circuits: 16/N/8; 16/N 3 circuits: 17/N/9; 17N 4 circuits: 18/N/10; 18/N	Illinois Bell: 2.2 hours Indiana Bell: 2.0 hours Michigan Bell: 2.8 hours Ohio Bell: 2.0 hours Wisconsin Bell: 2.4 hours
Bell Atlantic	1-4 circuits, 15 days (7 in selected areas)	No standard interval
BellSouth	1-4 circuits and equipment available: 6-7 days	3.5 hours
GTE	15 days	6.3 hours
Nevada Bell	Negotiated	Same day if request received before noon; 12 p.m. next day if received after noon
New England Telephone	Negotiated	No standard interval
New York Telephone	Negotiated	No standard interval

Pacific Bell	1-5 circuits: 19 days	4 hours
Southwestern Bell	1-4 circuits: 8-10 days; 5-8 circuits: 10-13 days; Minor construction: 19 days; Major construction: negotiated	3.5 hours
United	1-4 circuits: varies by state: 11-25 days if facilities available, 17-41 days if not available	Varies by state; 1-3 hours
US West	11 or 26 days, depending on whether equipment is in place	98% within 2 hours

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Notes:

1. For Ameritech, first set of numbers is for interstate circuits, span in place/no span in place/selected serving areas. Second set of numbers is for intrastate circuits, span in place/no span in place. "N" means negotiated.

L. DS3

	Installation	Repair
Ameritech	1 circuit: 15/N/7; N/N	Illinois Bell: 2.2 hours Indiana Bell: 2.0 hours Michigan Bell: 2.8 hours Ohio Bell: 2.0 hours Wisconsin Bell: 2.4 hours
Bell Atlantic	1-3 circuits, POP to POP: 10 days. Otherwise negotiated	No standard interval
BellSouth	17 days for new service if facilities available	2.5 hours
GTE	42 days	6.3 hours
Nevada Bell	Negotiated	Same day if request received before noon; 12 p.m. next day if received after noon
New England Telephone	Negotiated	No standard interval
New York Telephone	Negotiated	No standard interval

Pacific Bell	1-5 circuits: 19 days	4 hours
Southwestern Bell	1-4 circuits: 8-10 days; 5-8 circuits: 10-13 days; Minor construction: 31 days; Major construction: negotiated	3.5 hours
United	ICB; no standard	Varies by state; 1-3 hours
US West	11 days if equipment available	98% within 2 hours

Notes:

1. For Ameritech, first set of numbers is for interstate circuits, span in place/no span in place/selected serving areas. Second set of numbers is for intrastate circuits, span in place/no span in place. "N" means negotiated.

M. SWITCHED FEATURE GROUP A

	Installation	Repair
Ameritech	1-6 circuits: 10 days 7-12 circuits: 14 days	2.8 hours
Bell Atlantic	1-8 circuits: 9 days 9-16 circuits: 12 days 17-24 circuits: 16 days	No standard interval
BellSouth	1-8 circuits: 7 days 9-16 circuits: 10 days 17-24 circuits: 13 days	4.5 hours
GTE	10 days	6.3 hours
Nevada Bell	1-4 circuits: 11 days 5-8 circuits: 13 days 9-12 circuits: 14 days 13-16 circuits: 16 days	4 hours
New England Telephone	1-8 circuits: 12 days	No standard interval
New York Telephone	1-8 circuits: 12 days	No standard interval
Pacific Bell	1-4 circuits: 11 days	4 hours

Southwestern Bell	1-8 circuits: 7 days 9-16 circuits: 9 days 17-24 circuits: 12 days	3.5 hours
United	Varies by state: 1-4 lines: 1-17 days 5-8 lines: 12-20 days	Varies by state; 2-4 hours
US West	1-8 circuits: 11 days	2 hours for high density areas; otherwise 4 hours

N. BASIC BUSINESS SERVICE (IMB AND EQUIVALENT)

	Installation	Repair
Ameritech	Varies by state: 1-3 circuits: 2-4 days 4-10 circuits: 4-5 days 11-35 circuits: 5-15 days	4 hours except Indiana: out-of-service same day, service-affecting next day
Bell Atlantic	No standard interval	No standard interval
BellSouth	Southern Bell: 2 days if former customers; 4 days if not, except 3 in Florida for both cases; S.C. Bell: 1-3 lines: 2 days	24 hours
GTE	Follows PUC requirements; generally 90-95% within 3-5 days or less than 10% missed appointments	No standard interval
Nevada Bell	Reno and Carson City: 0-1 day; Other areas: pre-established dispatch schedule; 2-5 days >5 lines: negotiated	Normally within 24 hours; M-F in larger communities, "rolling" 6 hour commitment
New England Telephone	Per customer specification	No standard interval
New York Telephone	Per customer specification	No standard interval

Pacific Bell	Per customer specification	4-6 hours
Southwestern Bell	1-2 circuits: 2-5 days, depending on state 3-10 circuits: 5 days	No more than 4 work-time hours
United	Varies by state: 2-5 days	Varies by state; 2-4 hours
US West	Per customer requirement	Varies by state; 2-4 hours

O. PBX TRUNKS

	Installation	Repair
Ameritech	Varies by state: 1-3 trunks: 2-10 days 4-10 trunks: 4-10 days	4 hours except Indiana: out-of-service same day, service-affecting next day
Bell Atlantic	No standard interval	No standard interval
BellSouth	Southern Bell: 2 days if former customers; 4 days if not, except 3 in Florida for both cases; S.C. Bell: 1-3 trunks: 2 days; 4-10 trunks: 5 days	24 hours
GTE	Follows PUC requirements; generally 90-95% within 3-5 days or less than 10% missed appointments	No standard interval
Nevada Bell	10 days	Normally within 24 hours; M-F in larger communities, "rolling" 6 hour commitment
New England Telephone	Per customer specification	No standard interval

New York Telephone	Per customer specification	No standard interval
Pacific Bell	1-15 circuits: 12 days	4-6 hours
Southwestern Bell	1-8 circuits: 9 days 9-16 circuits: 11 days 17-24 circuits: 14 days	3.5 hours
United	Varies by state: 3-10 days	Varies by state; 2-4 hours
US West	Per customer requirement	Not disclosed

P. CENTREX

	Installation	Repair
Ameritech	Illinois Bell: 1-30 stations, 12 days Indiana Bell: 1-10 stations, 1 week Michigan Bell: Negotiated Ohio Bell: 1-50 stations, 3 weeks Wisconsin Bell: 1-3 stations, 5 days 6-20 stations, 10 days	4 hours except Indiana: out-of-service same day, service-affecting next day
Bell Atlantic	No standard interval	No standard interval
BellSouth	Southern Bell: 2 days if former customers; 4 days if not, except 3 in Florida for both cases; S.C. Bell: 1-3 trunks: 2 days; 4-10 trunks: 5 days	24 hours
GTE	Follows PUC requirements; generally 90-95% within 3-5 days or less than 10% missed appointments	No standard interval
Nevada Bell	1-5 circuits: 5 days 6-10 circuits: 10 days 11-15 circuits: 15 days	Normally within 24 hours; M-F in larger communities, "rolling" 6 hour commitment
New England Telephone	Per customer specification	No standard interval

New York Telephone	Per customer specification	No standard interval
Pacific Bell	1-5 circuits: 5 days	4-6 hours
Southwestern Bell	1-8 circuits: 9 days 9-16 circuits: 11 days 17-24 circuits: 14 days	4 work-time hours
United	Varies by state: 3-10 days	Varies by state; 2-4 hours
US West	Per customer requirement	2 hours for designed services, 4 hours for non-designed services

Q. 911 SERVICE

	Installation	Repair
Ameritech	Negotiated: 18-24 months	2.8 hours
Bell Atlantic	Negotiated	Top priority
BellSouth	Negotiated	Expedited
GTE	Follows PUC requirements; generally 90-95% within 3-5 days or less than 10% missed appointments	No standard interval
Nevada Bell	Negotiated	1 hour (immediate dispatch)
New England Telephone	No standard interval	No standard interval
New York Telephone	No standard interval	No standard interval
Pacific Bell	12 days	When wanted
Southwestern Bell	1-8 circuits: 9 days 9-16 circuits: 11 days 17-24 circuits: 14 days	ASAP
United	Negotiated	Varies by state; 1-2.75 hours
US West	Per customer requirement	Not disclosed

QUESTION 4: Please report your internal standards for C-message noise, balance, loss, gain slope, and C-notch noise for each of the services listed in questions 2 and 3. If certain of these criteria are not relevant to a particular service, please explain in detail.

A. RESIDENTIAL AND 1MB BUSINESS

CARRIER	LOSS	SLOPE	BALANCE	C-MESSAGE NOISE	C-NOTCH NOISE
Ameritech	8.5 dB	No standard	Not applicable	30 dBrnc0	Not applicable
Bell Atlantic	≤ 10 dB	Not specified	>60 dB recommended 50-60 dB acceptable <50 dB not acceptable	<20 dBrnc0 recommended >30 dBrnc0 not recommended	≤ 30 dBrnc0
BellSouth	9.0 dB	No measurement, but limited to 8.0 dB	11 dB (echo return loss)	20 dBrnc0	45 dBrnc0
GTE	8.5	+/- 0.5 dB	60 dB minimum	20 dBrnc0	Not applicable

CARRIER	LOSS	SLOPE	BALANCE	C-MESSAGE NOISE	C-NOTCH NOISE
Nevada Bell	8.0 dB	-1.5 to +8.0 dB	(echo return loss): 5.5 (singing return loss): 3	20-34 dB	No requirement
New England Telephone	10 dB (residential) 8.5 dB (business)	No standard	No standard	20 dBrnc0	No standard
New York Telephone	10 dB (residential) 8.5 dB (business)	No standard	No standard	20 dBrnc0	No standard
Pacific Bell	8.0 dB	-1.5 to +8.0 dB	(echo return loss): 5.5 (singing return loss): 3	20-34 dB	No requirement
Southwestern Bell	10.5 dB	No standard	50 dB longitudinal balance	30 dB	No standard
United	References Bellcore's Notes on the LEC Networks				
US West	Explains testing process but does not disclose standards				

Notes:

1. The LECs all state that these criteria are not applicable to telegraph grade or digital criteria.

2. New York and New England reference a NYNEX Proprietary Document and offer to make it available for review.

B. ANALOG ACCESS SERVICES

Each of the RBOCs derives its standards for the following services from Bellcore Technical References.

SERVICE	LOSS	GAIN SLOPE	BALANCE		C-MESSAGE NOISE	C-NOTCH NOISE
			ERL	SRL		
FGA	-8.0 dB	-1.5 to +8.0 dB	17	12	27-41 dB	40
FGB	-6.0 dB	-1.0 to +2.0 dB	21	14	28 dB	41
FGC	-6.0 dB	-1.0 to 2.0 dB	21	14	28 dB	41
FGD	-6.0 dB	-0.5 to +1.5 dB	21	14	28 dB	39
VOICE GRADE	[Varies by class of VG service]					
WATS	0 to -7.5 dB	-2.5 to +8 dB	5.5	3	29 to 41 dB	30
800	-6.0 dB	-0.5 to +1.5 dB	27	20	26 to 40 dB	39

SERVICE	LOSS	GAIN SLOPE	BALANCE		C-MESSAGE NOISE	C-NOTCH NOISE
			ERL	SRL		
AUDIO	-12 to -32 dB	+3 to -12 dB	No req't		37 to 44 dB	No req't
WIDEBAND	-9d BmO	-1.3 to +1.9 dB	No req't		No req't	No req't

Notes:

1. United uses Type A, Type B, and Type C transmission specifications, which are selected by the customer and apparently do not correspond to particular access services. (The specifications are disclosed in United's tariffs.)

2. GTE discloses its Technical Interface Reference Manual, which provides detailed acceptance and maintenance limits for various service configurations. The values appear similar to those followed by the BOCs.

C. PBX TRUNKS

CARRIER	LOSS	GAIN SLOPE	BALANCE	C-MESSAGE NOISE	C-NOTCH NOISE
Ameritech	-4 dB	-2 to +6 dB	N/A	30 dBrnc0	N/A
Bell Atlantic	-4	-1 to +4.5	N/A	20	N/A
BellSouth	-5	5	11ERL	20	45
GTE	Does not disclose				
Nevada Bell	-5.5	-1.5 to +5	5.5 ERL 3.0 SRL	20-34	N/A
New England Telephone	-4	-2 to +6	No standard	20	No standard
New York Telephone	-4	-2 to +6	No standard	20	No standard
Pacific Bell	-5.5	-1.5 to +5	5.5 ERL 3.0 SRL	20-34	N/A
Southwestern Bell	4 +/- 1 dB	-1.5 to +5	50 dB longitude	20	No standard
United	Does not disclose				
US West	Explains testing process but does not disclose standards				

D. CENTREX

CARRIER	LOSS	GAIN SLOPE	BALANCE	C-MESSAGE NOISE	C-NOTCH NOISE
Ameritech	-5 dB	-2 to +9 dB	N/A	30 dBrnc0	N/A
Bell Atlantic	-5 dB	-1 to +7.5 dB	N/A	20	N/A
BellSouth	-5 dB	5 dB	11ERL	20	45
GTE	-5.5	-1.5 to +8 dB	60 dB minimum	20	N/A
Nevada Bell	-7 dB	-1.5 to +8 dB	5.5 ERL 3.0 SRL	20-34	N/A
New England Telephone	-5 dB	-2 to +9	No standard	20	No standard
New York Telephone	-5 dB	-2 to +9	No standard	20	No standard
Pacific Bell	-7 dB	-1.5 to +5 dB	5.5 ERL 3.0 SRL	20-34	N/A
Southwestern Bell	-5 +/- 1 dB	No standard	50 dB longitudinal	20	No standard
United	Does not disclose				
US West	Explains testing process but does not disclose standards				

E. 911 SERVICE

CARRIER	LOSS	GAIN SLOPE	BALANCE	C-MESSAGE NOISE	C-NOTCH NOISE
Ameritech	-8.5 dB	-2 to +6 dB	N/A	Not disclosed	No standard
Bell Atlantic	-4 dB	-1 to +4.5 dB	N/A	20	N/A
BellSouth	-5 dB	5 dB	11ERL	20	45
GTE	Does not disclose				
Nevada Bell	-6 dB	-1.5 to +8 dB	5.5 ERL 3.0 SRL	20-34	N/A
New England Telephone	-10 dB	-2 to +6 dB	No standard	20	No standard
New York Telephone	-10 dB	-2 to +6 dB	No standard	20	No standard
Pacific Bell	-6 dB	-1.5 to +5 dB	5.5 ERL 3.0 SRL	20-34	N/A
Southwestern Bell	-4 +/- 1 dB	-1.5 to +5 dB	50 dB longitudinal	20	No standard
United	Does not disclose				
US West	Explains testing process but does not disclose standards				

QUESTION 5: Please report your internal standard for satisfactory performance of a central office with respect to each of the criteria listed in Question 4.

Most LECs apparently do not measure central office transmission quality based on those criteria. Many LECs employ other measurements, as noted below:

1. AMERITECH

Ameritech tests central office trunks for loss, slope, balance, and noise. Its standards are included in Attachment A. In addition, it uses the Network Switch Performance Measurement Plan (described in the next paragraph regarding Bell Atlantic) to measure end office performance.

2. BELL ATLANTIC

Bell Atlantic does not have aggregate central office standards for those criteria. It does have standards for interoffice trunk groups, but does not disclose them. It also measures end office performance through the Network Switch Performance Measurement Plan. This Plan includes measurements of office overflow, dial speed, outgoing call set up troubles, incoming call setup troubles, billing accuracy, and customer trouble reports. Bell Atlantic considers its standards for these criteria (which vary by switch type) to be proprietary.

3. BELLSOUTH

BellSouth measures end office performance through the Network Switch Performance Measurement Plan.

4. GTE

GTE measures the performance of central office trunks, and measures end office performance for dial tone speed and trunk group blockage. It does not appear that GTE uses the Network Switch Performance Measurement Plan or equivalent system.

5. NEVADA BELL

Nevada Bell includes a chart (Attachment B) that sets forth its central office trunk transmission quality criteria. It also uses a switch performance analysis plan, (apparently the Network Switch Performance Measurement Plan) that measures the operation of each of its 54 switches monthly.

This plan examines overflow, trunk outages, set-up troubles, billing accuracy, trouble reports, and dial tone speed. The standards for these criteria vary by switch type.

6. NEW ENGLAND TELEPHONE

New England Telephone does not use these criteria for measuring central office transmission quality. It does, however, measure end office performance based on dial tone speed, blockage, billing performance, and central office trouble reports, although it does not disclose its internal standards for these criteria.

7. NEW YORK TELEPHONE

New York Telephone does not use these criteria for measuring central office transmission quality. It does, however, measure end office performance based on dial tone speed, blockage, billing performance, and central office trouble reports, although it does not disclose its internal standards for these criteria.

8. PACIFIC BELL

Pacific Bell includes a chart (Attachment C) that sets forth its central office trunk transmission quality criteria. In addition, it measures end office performance based on dial tone delay, receiver overflow, transmitter timeouts, office overflow, matching loss, reports per 100 lines, and "observed irregularities on randomly selected outgoing calls."

9. SOUTHWESTERN BELL

Southwestern Bell measures trunk transmission quality and references Bellcore and other documents. It also measures switch performance, focusing on dial tone speed, internal service trunk blocking performance and overflow observations, matching loss, billing performance, and trouble reports. It does not disclose its standards for these criteria.

10. UNITED

United does not evaluate central office performance based on the criteria listed in question 4. It does, however, employ the Network Switch Performance Measurement Plan (which it calls the Local Measurement Plan) for its digital central offices. For analog switches, United

generates weekly Trouble Order and Service Order Entry reports that identify specific problem locations.

11. US WEST

Central office performance is measured using the Network Switch Performance Measurement Plan. Results are weighted based on impact on the customers, impact on revenues, and severity of equipment failure or outage. Reports are generated for each central office and summarized at higher levels of aggregation.